

WHAT IS CLAIMED IS:

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1. A data communication device that is connected to a central management device through a communication line, and controls communication between said central management device and an image-forming device, said data communication device comprising:

a power source;

a data-storing unit storing data related to said image-forming device;

a data transmission unit;

15 a transmission-request generating unit being always supplied with electricity from said power source, and generating a transmission request that requests for transmission of the data to said central management device; and

20 a power-supply control unit being always supplied with the electricity from said power source, and supplying the electricity from said power source to a communication-related part including said data transmission unit, if said transmission-request generating unit generates the transmission request,

wherein said data transmission unit transmits the data to said control management device if being supplied with the electricity from said power source.

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2. The data communication device as claimed in claim 1, wherein said power-supply control unit stops 10 supplying the electricity from said power source to said communication-related part, after said data transmission unit completes transmitting the data related to said image-forming device to said central management device.

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3. The data communication device as claimed in claim 1, wherein said transmission-request generating 20 unit includes:

a time generating unit generating a current time; and

a time comparing unit comparing the current time with a predetermined data-transmission time, and 25 generating the transmission request if deciding that the

current time matches with the data-transmission time.

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4. The data communication device as claimed in claim 1, wherein said transmission-request generating unit includes:

10 a time generating unit generating a current time;

15 a data deciding unit comparing the current time with a predetermined data-transmission time, and deciding whether the data related to said image-forming device is stored in said data-storing unit if deciding that current time matches with the data-transmission time; and

20 a transmission requesting unit generating the transmission request if said data deciding unit decides that the data related to said image-forming device is stored in said data-storing unit.

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5. The data communication device as claimed

in claim 1, wherein said transmission-request generating unit includes:

          a time generating unit generating a current time;

5          a data deciding unit deciding whether the data related to said image-forming device is stored in said data-storing unit; and

          a time comparing unit comparing the current time with a predetermined data-transmission time corresponding to the data related to said image-forming device if said data deciding unit decides that the data related to said image-forming device is stored in said data-storing unit, and generating the transmission request if deciding that the current time matches with 15 the data-transmission time.

20          6. The data communication device as claimed in claim 1, wherein said transmission-request generating unit includes:

          a time generating unit generating a current time;

25          a data deciding unit deciding whether the data

related to said image-forming device is stored in said data-storing unit;

5 a time setting unit setting a transmission time corresponding to the data related to said image-forming device, if said data deciding unit decides that the data related to said image-forming device is stored in said data-storing unit; and

10 a time comparing unit comparing the current time with the transmission time, and generating the transmission request if deciding that the current time matches with the transmission time.

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7. The data communication device as claimed in claim 1, further comprising a call-origin deciding unit being always supplied with the electricity from said power source, and deciding whether a call origin is 20 said central management device based on a signal received continuously after a call signal, if receiving the call signal from said communication line in accordance with a call out made by the call origin, wherein said power-supply control unit is 25 always supplied with the electricity from said power

source, and supplies the electricity from said power source to said communication-related part if said call-origin deciding unit decides that the call origin is said central management device, and

5           wherein said data transmission unit transmits the data related to said image-forming device to said control management device if being supplied with the electricity from said power source.

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8.   The data communication device as claimed in claim 7, wherein said power-supply control unit stops 15 supplying the electricity from said power source to said communication-related part, after said data transmission unit completes transmitting the data related to said image-forming device to said central management device.

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9.   The data communication device as claimed in claim 1, further comprising:

25           a transmission-request-signal transmitting

unit;

a data writing unit; and

an acquisition-request generating unit being  
always supplied with electricity from said power source,  
5 and generating an acquisition request that requests for  
acquisition of the data related to said image-forming  
device from said image-forming device,

wherein said power-supply control unit  
supplies the electricity from said power source to said  
10 transmission-request-signal transmitting unit and said  
data writing unit if said acquisition-request generating  
unit generates the acquisition request, said  
transmission-request-signal transmitting unit transmits  
a transmission-request signal to said image-forming  
15 device if being supplied with the electricity from said  
power source, and said data writing unit writes the data  
related to said image-forming device in said data-  
storing unit if receiving the data related to said  
image-forming device from said image-forming device in  
20 response to said transmission-request signal after being  
supplied with the electricity from said power source.

10. The data communication device as claimed in claim 9, wherein said power-supply control unit stops supplying the electricity from said power source to said transmission-request-signal transmitting unit and said 5 data writing unit, after said data writing unit completes writing the data related to said image-forming device in said data-storing unit.

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11. The data communication device as claimed in claim 9, wherein said acquisition-request generating unit includes:

15 a time generating unit generating a current time; and  
a time comparing unit comparing the current time with a predetermined data-acquisition time, and generating the acquisition request if deciding that the 20 current time matches with the data-acquisition time.

25 12. The data communication device as claimed

in claim 7, further comprising:

a data-type deciding unit; and  
a transmission-request-signal transmitting  
unit,

5                   wherein said power-supply control unit  
supplies the electricity from said power source to said  
data-type deciding unit and said transmission-request-  
signal transmitting unit if said call-origin deciding  
unit decides that the call origin is the central  
10                management device,

                  wherein said data-type deciding unit decides a  
type of data that should be transmitted to said central  
management device based on said signal received  
continuously after the call signal from said  
15                communication line, after being supplied with the  
electricity from said power source,

                  wherein said transmission-request-signal  
transmitting unit transmits a transmission-request  
signal to said image-forming device, if and only if said  
20                transmission-request-signal transmitting unit is  
supplied with the electricity from said power source,  
and said data-type deciding unit decides that said data  
which should be transmitted to said central management  
device is the data related to said image-forming device,  
25                and

wherein said data transmission unit transmits  
the data related to said image-forming device, to said  
central management device, if and only if being supplied  
with the electricity from said power source and  
5 receiving said data related to said image-forming device  
from said image-forming device in response to the  
transmission-request signal.

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13. The data communication device as claimed  
in claim 12, wherein said transmission-request-signal  
transmitting unit adds information indicating said type  
15 decided by said data-type deciding unit, to the  
transmission-request signal.

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14. The data communication device as claimed  
in claim 1, further comprising a data writing unit,  
wherein said power-supply control unit  
supplies the electricity from said power source if  
25 receiving a startup signal starting up said data

communication device from said image-forming device, and  
said data writing unit writes the data related to said  
image-forming device in said data-storing unit if being  
supplied with the electricity from said power source and  
5 receiving the data related to said image-forming device  
from said image-forming device.

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15. The data communication device as claimed  
in claim 14, wherein said power-supply control unit  
stops supplying the electricity from said power source  
to said data writing unit after said data writing unit  
15 completes writing the data related to said image-forming  
device in said data-storing unit.

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16. The data communication device as claimed  
in claim 14, further comprising a data-type deciding  
unit,

wherein said power-supply control unit  
25 supplies the electricity from said power source to said

data-type deciding unit if receiving the startup signal from said image-forming device, said data-type deciding unit decides a type of the data related to said image-forming device if receiving the data related to said 5 image-forming device from said image-forming device after being supplied with the electricity from said image-forming device, said power-supply control unit supplies the electricity from said power source to said communication-related part if said data-type deciding 10 unit decides that the data received from said image-forming device is data indicating an abnormal condition, and said data transmission unit transmits the data received from said image-forming device to said data communication device if receiving the electricity from 15 the power source.

20                   17. The data communication device as claimed in claim 1, wherein said communication line is a public line, and said image-forming device is a copy machine.

18. An image-forming device that is connected to a data communication device, and communicates with a central management device in accordance with control carried out by said data communication device, said 5 image-forming device comprising:

a power source;

a data transmission unit; and

a power-supply control unit being always supplied with electricity from said power source, and 10 supplying the electricity from said power source to a communication-related part including said data transmission unit if receiving a transmission-request signal from said data communication device,

wherein said data transmission unit transmits 15 data related to said image-forming device, to said data communication device if being supplied with the electricity from said power source.

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19. The image-forming device as claimed in claim 18, wherein said data related to said image-forming device is data that indicates a total number of 25 images formed by said image-forming device or a

condition of said image-forming device.

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20. The image-forming device as claimed in  
claim 18, wherein said power-supply control unit stops  
supplying the electricity from said power source to said  
communication-related part, after said data transmission  
10 unit completes transmitting the data related to said  
image-forming device, to said data communication device.

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21. The image-forming device as claimed in  
claim 18, wherein said power-supply control unit  
supplies the electricity from said power source to a  
part that needs power supply for acquiring data, which  
20 should be transmitted to said central management device  
among the data related to said image-forming device, if  
receiving the transmission-request signal from said data  
communication device.

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22. The image-forming device as claimed in  
claim 21, wherein said power-supply control unit stops  
supplying the electricity from said power source to said  
part that needs the power supply for acquiring the data,  
5 which should be transmitted to said central management  
device, after said data transmission unit completes  
transmitting the data that should be transmitted to said  
central management device, to said data communication  
device.

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23. The image-forming device as claimed in  
15 claim 21, further comprising a power-supply part setting  
unit setting the part that needs the power supply for  
acquiring the data, which should be transmitted to said  
central management device.

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24. The image-forming device as claimed in  
claim 18, wherein said data transmission unit transmits  
25 data corresponding to information that indicates a type

of data, which should be transmitted to said central management device, and is added to said transmission-request signal, among the data related to said image-forming device, if said data transmission unit is  
5 supplied with the electricity from said power source.

10 25. The image-forming device as claimed in  
claim 24, wherein said power-supply control unit stops  
supplying the electricity from said power source to said  
communication-related part, after said data transmission  
unit completes transmitting the data corresponding to  
15 the information, to said data communication device.

20 26. The image-forming device as claimed in  
claim 24, wherein said power-supply control unit decides  
the part that needs the power supply for acquiring the  
data, which should be transmitted to said central  
management device, based on said information added to  
25 the transmission-request signal, and supplies the

electricity from said power source to the part that  
needs the power supply for acquiring the data, which  
should be transmitted to said central management device,  
if receiving the said data-transmission signal from said  
5 data communication device.

10 27. The image-forming device as claimed in  
claim 26, wherein said power-supply control unit stops  
supplying the electricity from said main power source to  
said part that needs the power supply for acquiring the  
data, which should be transmitted to said central  
15 management device, after said data transmission unit  
completes transmitting the data corresponding to the  
information to said data communication device.

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28. The image-forming device as claimed in  
claim 18, further comprising:  
a startup-signal transmitting unit; and  
25 a main switch,

wherein said power-supply control unit is  
always supplied with the electricity from said power  
source, and supplies the electricity from said power  
source to said image-forming device entirely according  
5 to an operation of said main switch,

wherein said startup-signal transmitting unit  
transmits a startup signal to said data communication  
device to start up said data communication device if  
being supplied with the electricity from said power  
10 source, and

wherein said data transmission unit transmits  
the data related to said image-forming device, to said  
data communication device after said data transmission  
unit is supplied with the electricity from said power  
15 source, and said startup-signal transmitting unit  
transmits the startup signal to said data communication  
device.

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29. The image-forming device as claimed in  
claim 18, further comprising:

25 a startup-signal transmitting unit; and  
a transmission-request generating unit,

wherein said communication-related part  
further includes said startup-signal transmitting unit,  
wherein said transmission-request generating  
unit is always supplied with the electricity from said  
5 power source, and generates a transmission request that  
requests for transmission of the data related to said  
image-forming device to said data communication device,  
wherein said power-supply control unit is  
always supplied with the electricity from said power  
10 source, and supplies the electricity from said power  
source to said communication-related part if said  
transmission-request generating unit generates the  
transmission request,  
wherein said startup-signal transmitting unit  
15 transmits a startup signal to said data communication  
device to start up said data communication device if  
being supplied with the electricity from said power  
source, and  
wherein said data transmission unit transmits  
20 the data related to said image-forming device, to said  
data communication device after said data transmission  
unit is supplied with the electricity from said power  
source, and said startup-signal transmitting unit  
transmits the startup signal to said data communication  
25 device.

30. The image-forming device as claimed in  
claim 29, wherein said power-supply control unit stops  
supplying the electricity from said power source to said  
communication-related part, after said data transmission  
5 unit completes transmitting the data related to said  
image-forming device to said data communication device.

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31. The image-forming device as claimed in  
claim 29, wherein said power-supply control unit  
supplies the electricity from said power source to a  
part that needs power supply for acquiring data, which  
15 should be transmitted to said central management device  
among the data related to said image-forming device, if  
said transmission-request generating unit generates the  
transmission request.

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32. The image-forming device as claimed in  
claim 31, wherein said stops supplying the electricity  
25 from said power source to said part that needs the power

supply for acquiring the data, which should be transmitted to said central management device, after said data transmission unit completes transmitting the data that should be transmitted to said central  
5 management device, to said data communication device.

10           33. The image-forming device as claimed in claim 31, further comprising a power-supply part setting unit setting the part that needs the power supply for acquiring the data, which should be transmitted to said central management device.

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34. An image-forming device that is connected  
20 to a central management device through a communication line, comprising:

          a power source;  
          a communication control unit controlling communication with said central management device;  
25           a transmission-request generating unit being

always supplied with electricity from said power source, and generating a transmission request that requests for data transmission to said central management device; and a power-supply control unit being always

5 supplied with the electricity from said power source, and supplying the electricity from said power source to said communication control unit if said transmission-request generating unit generates the transmission request,

10 wherein said communication control unit transmits data related to said image-forming device to said central management device, if being supplied with the electricity from said power source.

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35. The image-forming device as claimed in claim 34, wherein said central management device is an 20 external device, and said communication line is a public line.

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36. The image-forming device as claimed in  
claim 34, wherein said data related to said image-  
forming device is data that indicates a total number of  
images formed by said image-forming device or a  
5 condition of said image-forming device.

10 37. The image-forming device as claimed in  
claim 34, wherein said power-supply control unit stops  
supplying the electricity from said power source to said  
communication control unit, after said communication  
control unit completes transmitting the data related to  
15 said image-forming device to said central management  
device.

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38. The image-forming device as claimed in  
claim 34, wherein said transmission-request generating  
unit includes:

25 a time generating unit generating a current  
time; and

a time comparing unit comparing the current time with a predetermined data-transmission time, and generating the transmission request if deciding that the current time matches with the data-transmission time.

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39. The image-forming device as claimed in  
10 claim 34, further comprising a call-origin deciding unit  
being always supplied with the electricity from said  
power source, and deciding whether a call origin is said  
central management device based on a signal received  
continuously after a call signal, if receiving the call  
15 signal from said communication line in accordance with a  
call out made by the call origin,

wherein said power-supply control unit is  
always supplied with the electricity from said power  
source, and supplies the electricity from said power  
20 source to said communication control unit if said call-  
origin deciding unit decides that the call origin is  
said central management device, and

wherein said communication control unit  
transmits the data related to said image-forming device  
25 to said control management device if being supplied with

the electricity from said power source.

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40. The image-forming device as claimed in  
claim 35, wherein said power-supply control unit stops  
supplying the electricity from said power source to said  
communication control unit, after said communication  
10 control unit completes transmitting the data related to  
said image-forming device to said central management  
device.

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41. The image-forming device as claimed in  
claim 39, wherein said power-supply control unit  
supplies the electricity from said power source to a  
20 part that needs power supply for acquiring data, which  
should be transmitted to said central management device  
among the data related to said image-forming device, if  
said call-origin deciding unit decides that the call  
origin is said central management device.

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42. The image-forming device as claimed in  
claim 41, wherein said power-supply control unit stops  
supplying the electricity from said power source to said  
part that needs the power supply for acquiring the data,  
5 which should be transmitted to said central management  
device, after said communication control unit completes  
transmitting the data that should be transmitted to said  
central management device, to said central management  
device.

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43. The image-forming device as claimed in  
15 claim 41, further comprising a power-supply part setting  
unit setting the part that needs the power supply for  
acquiring the data, which should be transmitted to said  
central management device.

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44. The image-forming device as claimed in  
claim 39, further comprising:  
25 a data-type deciding unit being supplied with

the electricity from said power source, and deciding a type of data that should be transmitted to said central management device based on the signal received continuously after the call signal from said 5 communication line, if said call-origin deciding unit decides that the call origin is said central management device; and

a power-supply part deciding unit being always supplied with the electricity from said power source, 10 and deciding a part that needs power supply for acquiring data, which should be transmitted to said central management device among the data related to said image-forming device,

wherein said power-supply control unit 15 supplies the electricity from said power source to a part decided by said power-supply part deciding unit as the part that needs power supply for acquiring data, which should be transmitted to said central management device, and

20 wherein said communication control unit acquires the data that should be transmitted to said central management device, and transmits the data that should be transmitted to said central management device, to said central management device, if being supplied 25 with the electricity from said power source.

45. The image-forming device as claimed in  
claim 44, wherein said power-supply control unit stops  
supplying the electricity from said power source to said  
communication control unit and said part decided by said  
5 power-supply part deciding unit as the part that needs  
power supply for acquiring data, which should be  
transmitted to said central management device, if said  
communication control unit completes transmitting the  
data that should be transmitted to said central  
10 management device, to said central management device.

15 46. An image-forming-device management system,  
comprising:

an image-forming device;  
a data communication device; and  
a central management device managing said  
20 image-forming device remotely through a communication  
line and said data communication device,  
wherein said data communication device  
includes:  
a first power source;  
25 a data-storing unit storing data of said

image-forming device;  
a data-type deciding unit;  
a transmission-request-signal transmitting unit;

5 a first data transmission unit;  
a call-origin deciding unit being always supplied with the electricity from said first power source, and deciding whether a call origin is said central management device based on a signal received  
10 continuously after a call signal if receiving the call signal from said communication line in accordance with a call out made by the call origin; and  
a first power-supply control unit being always supplied with the electricity from said first power source, and supplying the electricity from said first power source to said data-type deciding unit, said transmission-request-signal transmitting unit and said first data transmission unit, if said call-origin deciding unit decides that the call origin is said  
15 central management device,  
wherein said data-type deciding unit decides a type of data that should be transmitted to said central management device based on the signal received continuously after the call signal from said  
20 communication line, if being supplied with the  
25

electricity from said first power source,  
wherein said transmission-request-signal  
transmitting unit transmits a transmission-request  
signal to said image-forming device, if and only if said  
5 transmission-request-signal transmitting unit is  
supplied with the electricity from said first power  
source, and said data-type deciding unit decides that  
the data which should be transmitted to said central  
management device is the data related to said image-  
10 forming device,  
wherein said first data transmission unit  
transmits the data related to said image-forming device  
to said central management device if being supplied with  
the electricity from said first power source, and  
15 receiving the data related to said image-forming device  
from said image-forming device in response to the  
transmission-request signal transmitted to said image-  
forming device by the transmission-request-signal  
transmitting unit, and  
20 wherein said first power-supply control unit  
stops supplying the electricity from said first power  
source to said data-type deciding unit, said  
transmission-request-signal transmitting unit and said  
first data transmission unit, after said first data  
25 transmission unit completes transmitting the data

related to said image-forming device to said central management device,

wherein said image-forming device includes:

a second power source;

5 a second data transmission unit; and

a second power-supply control unit that is always supplied with the electricity from said second power source, and supplies the electricity from said second power source to a communication-related part 10 including said second data transmission unit if receiving the transmission-request signal from said data communication device,

wherein said second data transmission unit transmits the data related to said image-forming device, 15 to said data communication device if being supplied with the electricity from said second power source, and

wherein said second power-supply control unit stops supplying the electricity from said second power source to said communication-related part after said 20 second data transmission unit completes transmitting the data related to said image-forming device to said data communication device.

47. The image-forming-device management system as claimed in claim 46,

wherein said transmission-request-signal transmitting unit of the data communication device adds 5 information indicating the type of the data that should be transmitted to said central management device, to the transmission-request signal, said type being decided by said data-type deciding unit, and

wherein said second power-supply control unit 10 of the image-forming device decides a part that needs power supply for acquiring data that should be transmitted to said central management device based on said information added to the transmission-request signal if receiving the transmission-request signal from 15 said data communication device, and supplies the electricity from said second power source to a part decided by said second power-supply control unit as the part that needs power supply for acquiring the data that should be transmitted to said central management device, 20 and stops supplying the electricity from said second power source to said part decided by said second power-supply control unit as the part that needs power supply for acquiring the data that should be transmitted to said central management device, after said second data 25 transmission unit completes transmitting the data that

should be transmitted to said central management device,  
to said data communication device.

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48. The image-forming-device management  
system as claimed in claim 46, wherein said data related  
to said image-forming device is data that indicates a  
10 total number of images formed by said image-forming  
device or a condition of said image-forming device.

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49. A method of controlling power supply in  
an image-forming-device management system that remotely  
manages an image-forming device by using a central  
management device through a communication line and a  
20 data communication device, said method comprising the  
steps of:

supplying electricity constantly from a power  
source of said data communication device to call-signal  
receiving means for receiving a call signal from the  
25 communication line according to a call out made by a

call origin, and call-origin deciding means for deciding whether the call origin is said central management device when receiving the call signal by the call-signal receiving means;

- 5           supplying the electricity from the power source of said data communication device to a communication-related part if deciding that the call origin is said central management device by said call-origin deciding means, said communication-related part
- 10          including data-type deciding means for deciding a type of data that should be transmitted to said central management device based on a signal received continuously after the call signal from said communication line, transmission-request signal
- 15          transmitting means for transmitting a transmission-request signal added with information indicating the type of the data that should be transmitted to said central management device, said type being decided by said data-type deciding means, to said image-forming
- 20          device if recognizing that the data which should be transmitted to said central management device is data related to said image-forming device based on a result of deciding the type of the data that should be transmitted to said central management device, and data
- 25          transmission means for receiving data from said image-

forming device in response to the transmission-request signal transmitted to said image-forming device, and transmitting the data received from said image-forming device to said central management device;

5                   stopping the power supply from said power source to said communication-related part after completing transmission of the data received from said image-forming device to said central management device;

10                  supplying the electricity constantly from a power source of said image-forming device to signal receiving means receiving the transmission-request signal from said data communication device;

15                  deciding a part that needs the power supply for acquiring the data which should be transmitted to said central management device among the data related to said image-forming device, based on said information added to the transmission-request signal if the transmission-request signal is received by said signal receiving means;

20                  supplying the electricity from the power source of said image-forming device to the part that needs the power supply for acquiring the data which should be transmitted to said central management device, and a part that needs the power supply for transmitting the data to said data communication device; and

stopping the power supply from the power source of said image-forming device to the part that needs the power supply for acquiring the data which should be transmitted to said central management device,  
5 and the part that needs the power supply for transmitting the data to said data communication device, after transmitting the data to said data communication device.

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50. A method of controlling power supply in an image-forming-device management system that manages  
15 an image-forming device by using a central management device through a data communication device, said method comprising the steps of:

supplying electricity constantly from a power source of said data communication device to call-signal  
20 receiving means for receiving a call signal from a call origin, and call-origin deciding means for deciding whether the call origin is said central management device when receiving the call signal by the call-signal receiving means, in said data communication device;  
25 supplying the electricity from the power

source of said data communication device to a communication-related part if deciding that the call origin is said central management device;

transmitting a transmission request from said 5 data communication device to said image forming device by use of said communication-related part;

receiving data from said image-forming device in response to the transmission request transmitted to said image-forming device;

10 transmitting the data to said central management device; and

stopping supplying the electricity from said power source to said communication-related part after transmitting the data to said central management device.

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51. The method as claimed in claim 50, 20 further comprising the steps of:

supplying the electricity constantly from a power source of said image-forming device to request receiving means receiving the transmission request from said data communication device, in said image forming 25 device;

deciding a first part that needs the power supply for acquiring the data, based on the transmission request if the transmission-request signal is received by said signal receiving means;

5           supplying the electricity from the power source of said image-forming device to the first part, and a second part that needs the power supply for transmitting the data to said data communication device;

transmitting the data to said data communication device; and

10           stopping supplying the electricity from the power source of said image-forming device to the first part and the second part after transmitting the data to said data communication device.

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